

Iron

What Is Iron?

Present in all cells of the human body, iron is a mineral that has several vital functions. As the major part of hemoglobin in red blood cells, it carries oxygen from the lungs to all parts of the body and facilitates oxygen use and storage in muscles. Every cell in the body needs iron to produce energy.

What Is Iron Deficiency?

When a person has used up the iron stored in her body, she is said to be “iron deficient.” Iron deficiency doesn’t always result in anemia, but it may cause other health problems such as lethargy or a weakened immune system. Iron deficiency occurs when the diet does not include enough iron rich foods, if there is blood loss, or if there is an increased need for iron in the body, such as during adolescence, pregnancy, and breastfeeding.

When the body does not get enough iron, it cannot make enough red blood cells to adequately carry oxygen throughout the body. The condition of having

too few red blood cells is called “anemia.” A person with anemia may look pale and feel tired. Severe anemia can lead to an irregular or increased heart rate as the heart must pump more blood to make up for the lack of oxygen.

Adolescent girls are at high risk for iron deficiency anemia because they usually have diets lacking iron and iron losses during menstruation. Adolescent athletes with low body stores of iron may be also at risk; intensive or excessive exercise can cause iron to be excreted through the gastrointestinal tract.

What Are the Consequences of Iron Deficiency

In the early stages of iron deficiency, a person may experience tiredness, decreased intellectual performance, reduced resistance to infection, and increased susceptibility to lead poisoning. Later stages may result in irritability, pallor, decreased tolerance for exercise, appetite loss, tachycardia (rapid heart action), and cardiomegaly (enlargement of the heart).

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Section 4

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How Much Iron Is Enough?

Adolescents need more iron due to increasing blood volume and muscle mass. The recommended amount of dietary iron for 11 - to 18-year-old boys is 12 milligrams per day. Adolescent girls of the same age need slightly more, 15 milligrams per day, due to menstrual losses.

What Are Good Sources of Iron?

Sources of dietary iron include meat, fish, and poultry. Green vegetables, such as broccoli and spinach, and legumes also contain iron. However, iron from plants is not absorbed as well as iron from meat sources. Iron-fortified foods, such as breads and cereals, also contribute iron to the diet.

Iron absorption can vary greatly from person to person. Iron absorption increases significantly with low body iron stores. Also, other foods eaten with iron-rich foods may affect how much iron is absorbed. Vitamin C-rich foods, such as citrus fruits/juices, increase absorption. Coffee, tea, and sodas can reduce absorption.

What About Iron Supplements?

Health care professionals do not usually recommend iron supplements unless iron-deficiency anemia is confirmed by a health care provider. In fact, too much iron can be harmful or fatal. Just 10 iron pills can kill a child!

Additional Screening

Use the “How Much Iron Am I Getting?” activity sheet to help the client determine how much iron she is getting from her diet. You can use the food replicas to help her with portion sizes.

Has the client ever been told by her medical care provider that she is anemic and if yes, what information and/or counseling was she given.

Follow-Up

Review the action plan with the client to determine if she achieved her goal(s) for behavior change.

If the client did not make any changes...

...Explore what barriers prevented her from doing so and discuss possible strategies for removing the barriers.

If the client made changes but still falls short of recommended intake...

...Revise action plan with the client to change or add goals for behavior change.

If the client has made changes and achieved the recommended intake...

...Help the client develop a new action plan for maintaining the new behavior.

Interventions/Referrals

If you suspect your client might be anemic — because of symptoms or responses to the Risk Questionnaire — refer her to a health care professional.

Use the “How Much Iron Am I Getting?” activity sheet to teach what foods are good sources of iron.

Use the “Why Do I Need Iron?” activity sheet to discuss symptoms of iron deficiency. Clients with these symptoms should be encouraged to discuss them with a medical provider.

Use the “Iron Tips” activity sheet to discuss how iron intake can be increased.

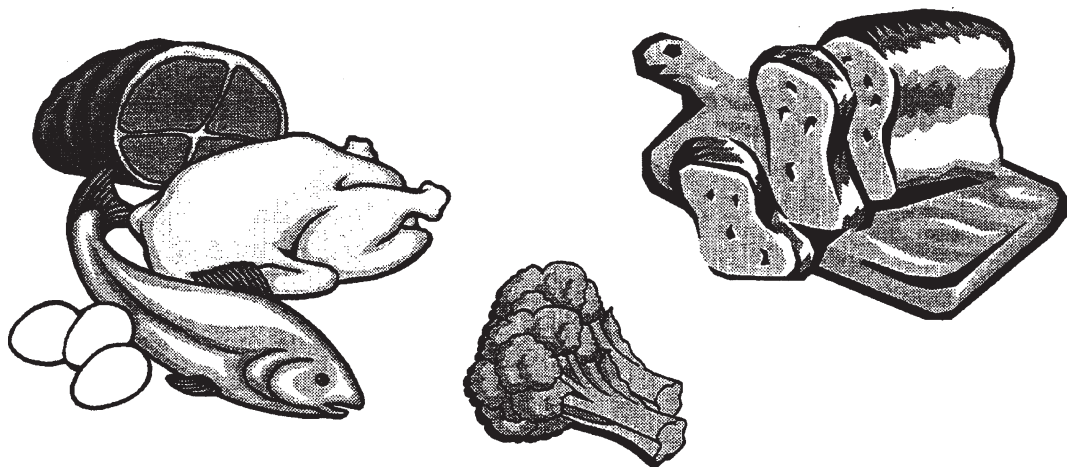
Use the “Action Plan for Iron” to assist the client in developing her plan for behavior changes she is willing to make to achieve the recommendation for optimal iron intake.

Why Do I Need Iron?

Iron is a mineral found in certain foods.

If you don't eat enough foods high in iron each day, you may:

- ❖ Look pale, feel tired, and act cranky
- ❖ Not feel like eating
- ❖ Have headaches and get sick more easily
- ❖ Have trouble learning and do poorly in school or work



How Much Iron Am I Getting

Iron Sources	Serving Size	Iron Contents (mg)	My Serving Size	My Iron Intake (mg)
VERY GOOD FOOD SOURCES:				
Beef, pork	3 oz	3		
Beef liver	3 oz	6		
Chili with meat and beans	1 cup	8		
Beans, cooked (pinto, kidney, garbanzo, lima, black, red)	1 cup	5		
Lentils, cooked	1 cup	6		
Oysters, cooked	3 oz	8		
Clams, canned, drained	1 oz	8		
All WIC cereal	3/4 cup	4-18		
Cream of wheat, instant, cooked	3/4 cup	9		
Baby cereals with iron, dry	4 Tbsp.	8		
GOOD FOOD SOURCES:				
Chicken, turkey	3 oz	1		
Fish, canned tuna, shrimp	3 oz	1		
Fish	1	1		
Tofu, firm	1/4 cup	3		
Corn or flour tortillas, enriched	1 average	1		
Rice or pasta, cooked	1 cup	2		
Bread, enriched	1 slice	1		
Leafy greens (Spinach, chard, collards, mustard, cilantro)	1/2 cup	3		
Peas, snow-peas	1/2 cup	1		
Prune juice	3/4 cup	2		
Dried fruit - raisins apricots, prunes	1/2 cup 10 pieces	2		
Peanut butter	2 Tbsp.	1		
			Total =	

Recommended daily intake of iron = _____ mg
My total daily intake of iron = _____ mg
How much more iron do I need? _____ mg

ACTION PLAN for IRON

Name: _____ Date: _____

Check the boxes that describe what you are presently doing and what you plan to do:

	AM DOING	PLAN TO DO
Add one serving of vegetables such as broccoli, spinach, or romaine lettuce to my diet most days of the week.	<input type="checkbox"/>	<input type="checkbox"/>
Try a breakfast cereal that contains iron such as Cream of Wheat.	<input type="checkbox"/>	<input type="checkbox"/>
Drink orange juice with iron-rich foods.	<input type="checkbox"/>	<input type="checkbox"/>
Try a fruit or vegetable from the iron-rich food list that I have never tried before.	<input type="checkbox"/>	<input type="checkbox"/>
Add one serving of black beans, pinto beans, garbanzo beans or lentils to my diet most days of the week.	<input type="checkbox"/>	<input type="checkbox"/>
My ideas for improving my iron intake:	<input type="checkbox"/>	<input type="checkbox"/>

Signature: _____ Date: _____
(optional)

Iron Tips!

- **Eat more foods that are good sources of iron every day.**
 - ◆ *Just eating a little meat with other foods can increase the iron your body can get from foods. For example, try putting a small amount of meat into your cooked beans. Meat is an "iron helper" - it helps your body use the iron from other foods.*
 - ◆ *If you are a vegetarian, eat beans and tofu often.*
- **Eat vitamin C foods with iron-rich foods to help your body use iron better.**
 - ◆ *Eat foods rich in vitamin C together with iron-rich foods. Vitamin C foods are "iron-helpers," too. For example, drink a glass of orange juice with your breakfast cereal or have some salsa on your taco.*
 - ◆ *Cook vitamin C foods and iron-rich foods together. For example, cook your beans with tomatoes or chilies.*
- **Coffee, tea, and sodas can make you take in less iron from the food you eat. If you drink coffee or tea (including decaffeinated), drink them between meals. Herbal tea is OK.**
- **Cook foods in cast-iron skillets, pots, or pans, if possible.**
- **Soak dry beans for several hours in cold water before you cook them. Pour off the water and use new water to cook the beans. Your body will take in more iron this way.**
- **If you are pregnant, take your prenatal vitamins. They have the extra iron that you need.**

IRON TIPS - TAKE TWO!

VITAMIN C FOODS

Vegetables:

tomato
broccoli
cauliflower
bell pepper
chili peppers
cabbage

Fruits:

oranges
cantaloupe
grapefruit
strawberry
kiwi
mango
papaya

Juices:

orange
grapefruit
tomato
lemon
lime

Read Food Labels!!!

1. Iron is added to many foods. Look for food labels that say "enriched" or "fortified." Examples of foods that may have extra iron are:
bread rice tortillas
cereals pasta
2. Vitamin C (ascorbic acid) is added to some foods because we need to have it every day. Look for labels that say 'added vitamin C.' Juices are a good example of a vitamin C enriched product. Check the label to see if each serving has 50% or more of the vitamin C that you need.
3. Avoid buying "fruit drinks" and other sweetened drinks that are high in sugar or corn syrup. Look for labels that say "100% juice."

